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No. 62.—Chessmen of walrus tooth, representing a King, a Bishop, and a Pawn; these were found in the sands on the shore of one of the Orkney Islands, and are supposed to be of the 12th century. I give them to illustrate the form of the *sword* and the *pastoral* crook of the period. These singular relics have been described by Sir F. Madden, in the “Archæologia,” vol. xxiv., p. 200. The objects represented in the five last sheets of illustrations are preserved in the British Museum.

No. 63.—This is an original drawing by my colleague, Mr. Foot, of an ornamented font in the old church of Aughtmama, near Oranmore, county of Clare. It represents a combat between two stags, and is in its way quite unique. *Vide* Portfolio.

The marked thanks of the Academy were voted to Mr. Du Noyer for this handsome and valuable donation.

The Secretary of the Academy read the following recommendation of the Council:—“That the sum of £30 be placed at the disposal of the Council for the purchase of antiquities during the current year;” and moved that the same be adopted by the Academy.

Whereupon it was moved and seconded, as an amendment:—“That the recommendation brought down from the Council be referred back to the Council for reconsideration, the amount proposed to be voted for the Museum being considerably less than ordinarily voted for many years back.”

A division having been called for, the amendment was declared to be lost; and the original motion, being put, was declared to be carried, —13 members having voted for, and 6 against it.

Donations of books were presented, and thanks voted to the donors. The Academy then adjourned.

MONDAY, JANUARY 27, 1862.

THE VERY REV. CHARLES GRAVES, D. D., President, in the Chair.

Dr. KINAHAN read the following—

SYNOPSIS OF THE SPECIES OF THE FAMILIES CRANGONIDÆ AND GALATHEIDÆ WHICH INHABIT THE SEAS AROUND THE BRITISH ISLES.

(Plates III.—XV.)

#### PART I.

The italicized genera and species are not British.

#### FAMILY—CRANGONIDÆ.

*Carapax depressus*, oculi superne aperti : Antenn. externæ filamento terminantes squamâ latâ basi præditæ. Ant. internæ ad basin dilatatæ, pedunculo brevi, duobus filis terminantes. Maxillipedes externi subpediformes. Chelipedes (pedes ambulatorii) paria quinque; par primum subcheliforme, par secundum didactylum, paria tertia ad quinta acuminata. Branchiæ paria septem. Genera: *Crangon*, *Cheraphilus*, *Ægeon*, *Nectocrangon*.

## GENUS I.

CRANGON, Carapax lævis, dente gastrico mediane sæpius, et dente branchialio utrinque armatus, rostratus. Rostrum breve, pedunculo oculorum non superans. Somites (segmenta) abdominales superne læves. Telson (segmentum ultimum) superne planum. Chelipedes (pedes ambulatorii) par primum satis grande, subcheliforme, par secundum minutum, debile, pare primo longitudinem æquans didactylum. Paria tertia ad quinta acuminata. Species *Cr. vulgaris*, *Franciscorum*, *rubropunctatus*.

1. *Crangon vulgaris* (Fabricius sp.).

C. Rostro perbrevis, apice rotundato superne excavato, orbibus totum circumciliatis. Carapace dentibus gastrico brachialibusque armato, Abdominis somitibus lævibus. Telson læve. Chelipedum pare secundo, paribus primo tertioque æquante, meros dentato. (Syn. *Cr. septemspinosa* (Say.), *Cancer Crangon* (Seba)). In littoris Magnæ Britanniæ et Hiberniæ.

Subgenus STEIRACRANGON (mihi). Carapax ut *Crangon*. Somites abdominis ad 5tum supra læves sextus superne canaliculatus; telson supra sulcatum. Species *St. propinquus*, *nigricauda*, *affinis*, *Allmanni*.

2. *Crangon* (*Steiraerangon*), *Allmanni* (Kin.)

St. Rostro brevi, apice subrotundato superne excavato. Orbibus totum circumciliatis, carapace ut *Cr. vulgaris*. Abdominis somite sexto bicarinato, sulcato. Telson supra sulcato, somitibus aliis lævibus. Chelipedibus ut *Cr. vulgaris*. In profundis ad "Dublin" et "Belfast," Hiberniam, et ad "Shetland," Mag. Brit.

## GENUS II.

CHERAPHILUS (mihi), Pontophilus (Leach, non Risso nec De Haan).

Carapax carinatus rostratus, Rostrum triangulare. Abdominis somites carinati, sculptique; telson suprasulcatum. Chelipedes secundi quam primo aut tertio breviores. Sp. Ch. bispinosus, trispinosus, *intermedius*, *bidentatus*, *angusticauda*, *Pattersonii*, spinosus, *boreas*, *Capensis*, *nanus*, *munitus*.

1. *Cheraphilus bispinosus* (Westwood sp.).

Ch. Rostro brevi, apice rotundato supra sulcato. Orbe margine externo ciliato, carapace, regione gastricâ medianâ bidentatâ, lateribus minute nodosis. Abdominis somitibus quinto sextoque bicarinatis. Telson superne excavato. Chelipedum pare secundo, dimidio tertii paris æquante. Synonyma *Pontophilus bispinosus* (West); *Crangon bispinosus* (Bell). In profundis ad "Dublin" et "Galway," Hibern. et ad "Hastings," Mag. Brit.

2. *Cheraphilus trispinosus* (Hailstone sp.).

Ch. Rostro perbreui apice rotundato superne excavato, Orbè paucibus ciliis fundo insitis. Carapace uno dente gastrico mediano et uno dente gastrico laterali solum armato; lateribus lævibus. Abdominis somite sexto, subcarinato, telson superne excavato. Chelipedum pare secundo, tenui; quam primo tertiove, multo breviori. Syn. *Pontophilus trispinosus* (Hailst.); *Crangon trispinosus* (Bell). Ad "Dublin," Hibern. et ad "Hastings," &c., Mag. Brit.

3. *Ch. Patersonii* (Mihi).

Ch. Rostro brevi apice rotundato, superne excavato. Orbe margine externo ciliato. Carapace regione gastricâ medianâ tridentato subcarinatâ, regione gastricâ laterali lineis dentibus minutis, regione branchialâ unidentatâ. Abdominis somite quinto sculpto; somite sexto obsoletè bicarinato. Telson sulcato. Chelipedum pare secundo dimidio parum primi vel tertii æquante. Syn. (*Crangon Pattersonii* mihi olim). Ad "Belfast," Hib. et ad "Shetland," Mag. Brit.

4. *Cheraphilus spinosus* (Leach sp.).

Ch. Rostro, satis longo, tenui, apice acuto superne basin sulcato, orbe profundo. Carapace regione gastricâ quinque dentium seriebus longitudinaliter armatâ, regione branchiale serie dentium. Abdominis somitibus tertio, quartoque carinato. Somite quinto sculpto. Somite sexto, obsoletè bicarinato, sulcato. Telson sulcato. Chelipedum pare secundo, dimidio primi aut secundi æquante. Syn. *Pontophilus spinosus* (Leach); *Cr. spinosus* (Bell); *Crangon cataphractus* (Milne Edwards, in part.); *Ægeon loricatus* (Guerin). In profundis marium Hiberniæ et Magnæ Britanniæ.

## GENUS III.

ÆGEON Risso (Crangon, Bell, Milne Edwards). Carapax percarinatus, rostrum truncatum aut bifidum. Abdominis somites dentati, sculpti, carinatique, telson sæpius suprasulcatum. Chelipedum par secundum quam tertio aut primo brevius. Species, *Æg. fasciatus*, sculptus, *carinicauda*, *cataphractus*.

1. *Ægeon fasciatus* (Risso sp.).

Æg. Rostro satis longo, apice truncato, sulcato. Orbe sparse ciliato margine externâ. Carapacis regionibus, gastricâ medianâ dente armatâ, gastricis lateralibus sculptis, regionibus branchialibus unidentatis, abdominis somitibus lævibus. Telson sulcato. Chelipedum pare secundo, primo tertiove brevioribus. Syn. *Crangon fasciatus* (Risso, Bell, M. Edwards). Littoris Hiberniæ et Magnæ Britanniæ.

2. *Ægeon sculptus* (Bell sp.).

Æg. Rostro satis longo, apice bifido, profundè sulcato. Orbibus dense ciliatis. Carapace, quinquedentato carinato. Abdominis somitibus sculptis, tertio ad quintum etiam carinatis, sexto etiam bicarinato-sulcato. Telson profunde sulcato. Chelipedum pare secundo quam tertio, multo breviori. Syn. *Crangon sculptus* (Bell). Littoris Hiberniæ et Magnæ Britanniciæ.

## GENUS IV.

*Nectocrangon* (Brandt.). Nondum in maribus Britannicis inventus. Syn. *Argis* (Kroyer) *Crangon*, (Owen). sp. *Nect. Lar.*

## HOMOLOGIES OF CRANGONIDÆ.—PLATE III.

GENERAL REFERENCES.—1, 2, &c., refer to the somites and their appendages, the ocular ring being counted the first; the coxæ are represented as attached to the somites. *cx*, coxa; *b*, basis; *i*, ischium; *m*, meros; *c*, carpus; *p*, propodus; *d*, dactylos; *g*, gastric region; *cd*, cardiac do.; *h*, hepatic do.; *br*, branchial do.; *f*, frontal do.; A, Abdomen; Kθ, Cephalothorax and its appendages; Md 4, lateral view of carapace; 1, first, or ocular segment; 3, olfactory antennal do.; 2, auditory antenna; 4, mandible; *md'''*, back view of carapace; Q, somites of mouth organs and their appendages; R, do. of ambulation; 10, 11, 12, first, second, and third chelipeds; those of 13–15 resemble 12; I, outline rostrum, *C. vulgaris*.—II. *Ch. spinosus*.—III. *Ch. bispinosus*.—IV. *Æ. fasciatus*.—V. *Æ. sculptus*.—VI. *Ch. cataphractus*.

## FAMILY—CRANGONIDÆ.

Carapace depressed; rostrum short, not articulated; eyes not concealed beneath carapace; external antennæ unifilamentous, furnished with a broad scale at their base; internal antennæ dilated at base, peduncle short, bifilamentous; external maxillipeds subpediform, flattened. Chelipeds, five pairs; first pair subcheliform, second didactyle; third to fifth pairs simple, acuminate. Branchiæ, seven on each side; antennæ inserted nearly on same line. Genera: *Crangon*, *Cheraphilus*, *Ægeon*.

## GENUS I.—CRANGON.

Rostrum triangular, shorter than the eyes. Carapace: median gastric region armed with a single spiny tooth at most; branchial regions with a single tooth, not ridged; antennæ as *family*; abdomen smooth above; telson triangular, smooth above; orbits circular, sparsely pubescent: first pair chelipeds well developed; second pair as long as fifth; antennal scale large. British Species: *Cr. vulgaris*.

In addition, as minor characters, the following are nearly general:—Antennæ long—more than twice length of peduncle of antennæ. Second pair of chelipeds as long as third, which are moderately stout.

## SPECIES I.

## Grey Shrimp.—Plate IV.

*Crangon vulgaris*. (Fabricius, not Owen or Dana.)

*Astacus Crangon*. Herbst. II., p. 57, t. xxix., fig. 3, 4; Penn. Brit. Zool., IV, t. xv., fig. 30; Müller, Zool. Dan., pl. civ., fig. 4–10.

*Crangon vulgaris*. Fabric., sup., 410; Lat. Crust., VI., p. 267, t. lv., f. 1, 2; Leach, Mal. Brit., t. xxxvii. B.; M. Edw. Crust., II., 341; Bell, Brit. Crust., p. 256, f.; White, Pop. Brit. Crust., p. 107, pl. viii., fig. 2; Guérin, Icon. R. A., t. 20, fig. 4. Kin.; Trans. Royal Irish Academy, vol. xxiv. p. 61.

*Crangon septemspinosa*. Say, Journal, Ac. Sc. Philadelph., I. 246; De Kay, Zool. New York, VI., p. 25, t. 8, f. 24.

*Crangon vulgaris* of Dana and of Owen is not this species, but *Crangon nigricauda* of Stimpson: it is found on the south and west coasts of America.

*Rostrum* (*r*), *very short, narrow, slightly rounded at apex, concave above; ocular notch, and sides of rostrum ciliated; carapace armed with one median gastric and two branchial teeth (one on each side); abdomen smooth, narrowed; telson triangular, smooth; second pair of chelipeds as long as the first or third; 9, external footjaw.*

Distribution:—Great Britain, all round the coast on sandy bottoms. Ireland, generally distributed. Europe, North seas, Mediterranean. America, North-east coast, Florida.

Subgenus STEIRACRANGON (Mihi), (*στεῖρα κρᾶνγον*).

Abdominal somites carinated, telson sulcated. British Species, St. Allmanni.

## SPECIES I.

## Channelled-tailed Shrimp.—Plate IV.

*Crangon* (Steiracrangon) *Allmanni* (Mihi).

*Cr. Allmanni*. Kin., Proc. Nat. Hist. Soc., Dublin, vol. II. Trans. R. I. A., vol. xxiv. p. 64, &c.; A. White Pop. Hist. Brit. Crust., 334.

*Rostrum* (*d*), *short, narrow; apex slightly rounded, hollowed above; ocular notch ciliated all round; carapace as CR. VULGARIS; sixth somite of abdomen bicarinated, sulcate; telson hollowed, triangular; other somites of abdomen smooth; second pair of chelipeds slender, equalling in length the first and the third pairs.*

*a*, 20th and 21st somites, with posterior pleopods; *b*, termination of telson; *c*, first cheliped. The spine on meros is not represented in the figure.

Distribution.—Great Britain, Shetland, Rev. A. M. Norman. Ireland, North-eastern coast, Belfast; East coast, Dublin.

GENUS II.—CHERAPHILUS (Mihi), *χερὰς φίλος*.

(Pontophilus of Leach, abandoned by that author, and the name subsequently applied to genera of the Pandalidæ, by Risso and De Haan.)

Rostrum triangular, moderate; carapace carinate; gastric region armed with one or more carinæ; branchial region multicarinated; abdominal somites carinated and sculptured; telson sulcated above; first pair chelipeds robust, moderate in length; second shorter than first: antennæ as family; antennal scale short. British Species: Ch. bispinosus, trispinosus, Pattersonii, spinosus.

In addition may be noted, accessory scale of antennæ moderate, not twice length of peduncle of antennæ; second pair of chelipeds much shorter than third.

## SPECIES I.

Two-spined Shrimp.—Plate V.

*Cheraphilus bispinosus* (Westwood Sp.)

*Pontophilus bispinosus*. Westwood, Hailst., Mag. Nat. Hist., viii., p. 11, 13, f. 30.

*Crangon bispinosus*. Bell, Brit. Crust., p. 268; A. White, Pop. Hist. Brit. Crust., 111. Kin. Trans. R. I. A. vol. xxiv. p. 66.

*Rostrum (r)*, short, rounded at apex, somewhat narrowed, hollowed above; ocular notch broad, ciliated on outer edge only; carapace rounded above; median gastric region bidentate, the teeth connected by an obsoletely-notched carina; lateral gastric and branchial regions furnished with rows of small knobs; fifth and sixth abdominal somites bicarinated; telson elongate, hollowed above; second pair of chelipeds (11) half length of third.

9, External maxilliped, terminal articulations; 10, First cheliped, with enlarged view of hairs on carpus. Figure four times size of life.

Distribution.—Great Britain, South coast, Hastings. Ireland, East Coast, Dublin; West Coast, Isles of Arran, Galway.

## SPECIES II.

Three-spined Shrimp.—Plate VI.

*Cheraphilus trispinosus* (Hailstone Sp.)

*Pontophilus trispinosus*. Hails., Mag. Nat. Hist., viii. p. 261, fig 25.

*Crangon trispinosus*. Bell, Brit. Crust., 265; A. White, Brit. Pop. Crust., 110; Kin. Proceed. Nat. Hist. Soc. Dub., vol. ii. Trans. R. I. A. vol. xxiv. p. 69.

*Rostrum (r)* very short, moderately broad, rounded at the apex, hollowed above; ocular notch broad, shallow, sparingly ciliated at its base; carapace rounded above, armed with one median and two lateral gastric teeth, which are continuous with an obsolete raised ridge; branchial regions smooth; sixth abdominal somite obsoletely carinated; telson hollowed; remaining

*somites smooth; second pair of chelipeds slender, much shorter than first or third.*

Figure four times life size.

Distribution.—Great Britain, South coast, Hastings; Weymouth. Ireland, East coast, Skerries, Dublin.

### SPECIES III.

Smooth-tailed Spinous Shrimp.—Plate VII.

*Cheraphilus Pattersonii* (Kin.)

*Crangon Pattersonii*. Kinahan, Proceedings Dubl. Nat. Hist. Soc., vol. ii., p. 130. Trans. R. I. A. vol xxiv. p. 71.

*Rostrum (r) short, rounded at apex, narrowed, concave above; ocular notch narrowed, ciliated on outer border only; carapace rounded above; median gastric region with a row of three principal teeth, connected by an obsolete carina; lateral gastric with rows of minute teeth terminating in one principal tooth; one tooth on each branchial region: fifth abdominal somite sculptured; sixth obsoletely bicarinate; telson (t), sulcate, elongate; second pair chelipeds half length of first or of third,*

Figure four times size of life.

Distribution:—Great Britain, North Coast, Shetland, Rev. A. M. Norman, *q*, *v*. Ireland, North-east coast, Belfast.

### SPECIES IV.

Spined Shrimp.—Plate VIII.

*Cheraphilus spinosus* (Leach Sp.).

*Crangon spinosus*. Leach, Linn. Trans., xi., p. 346; Lam. Hist. Nat.

Ms. An. S. Vert. v., p. 202; Bell, Brit. Crust., p. 261; A. White, 108; Thompson, Nat. Hist. Ireland, v. iv., p. 392; Kin. Trans.

R. I. A. vol. xxiv. p. 73.

*Pontophilus*. Leach, Mal. Brit., t. xxxvii. A.

*Crangon cataphractus*. M. Edwardes, Hist. de Crust., ii., p. 243 (excluding description of female, which refers to *Ægeon cataphractus* of present list, and Risso and Olivi, Cuv. R. A. (Croch.) t. 51, f. 3.)

*Ægeon loricatus*. Guerin, Exped. Morée, p. 33.

*Rostrum (r) moderately long, narrow, and pointed, concave at the base; ocular notch narrow, deep, ciliated all round; carapace contracted, rounded above, armed with five longitudinal rows of teeth on the gastric region, and one on each branchial region; third and fourth abdominal somites carinated; fifth somite sculptured; sixth obsoletely bicarinate, sulcate; telson sulcate, elongate; second pair of chelipeds half length of first or of third.*

10, First pair of chelipeds; 9, external footjaw.



Distribution.—Great Britain, reported from all the coasts, but this and former species are confounded by authors. Ireland, North-east coast, Belfast; South coast, Cork (?); West coast, Galway (?).

### GENUS III.—ÆGEON (Risso).

Rostrum truncate, or bifid. Carapace: branchial and gastric regions highly carinate; abdominal somites toothed, carinated, and sculptured; telson generally sulcate; first pair chelipeds moderate, barely surpassing second in length; second pair slender; orbits rounded, densely hairy; antennæ as family; antennal scale short. British Species: *Æg. fasciatus*, sculptus.

In addition, the following are pretty general:—Antennal scale not twice as long as peduncle of antennæ; second pair of chelipeds stout, but much shorter than first or third.

#### SPECIES I.

##### Banded Shrimp.—Plate IX.

##### *Ægeon fasciatus* (Risso Sp.).

*Crangon fasciatus*. Risso Crust. de Nice, t. iii., f. 5 (bad), p. 82; Hist. Eur. Mer. v., p. 64; M. Ed., Crust., ii., p. 342; Bell, Brit. Crust., p. 259; A. White, Pop. Hist. Brit. Crust., 187; Lucas, Exped. Alg., 38; W. Thomps., Nat. Hist. Ireland, iv., p. 390; Kin. Trans. R. I. A., vol. xxiv., p. 76.

*Rostrum (r) moderate, broadly truncate at apex, deeply longitudinally sulcate; ocular notch broad, shallow, smooth, or very sparingly ciliate on outer edge only; median gastric region armed with a tooth; lateral gastric sculptured; branchial region with a short tooth; abdominal segments smooth; telson triangular, sulcate; second pair of chelipeds shorter than first or third.*

10, First pair chelipeds. Figure twice and a half life size.

Distribution.—Great Britain, South coast. Ireland, North-eastern coast, Belfast; East coast, Dublin; West coast, Galway. Extra-Britannic, Mediterranean.

#### SPECIES II.

##### Sculptured Shrimp.—Plate IX.

##### *Ægeon Sculptus* (Bell Sp.)

*Crangon sculptus*. Bell. Brit. Crust., 263; A. White, Pop. Brit. Crust., 109; Kin. Trans. R. I. A., Vol. xxiv., p. 78.

*Rostrum (r), moderate, bifid at apex, deeply concave above; ocular notch moderate, densely ciliated all round; carapace armed with five principal toothed carinæ; abdomen highly sculptured; third to fifth somites*

*carinate; sixth bicarinate, sulcate; telson triangular, deeply triangularly sulcate above; second pair of chelipeds (11), much shorter than third.*

(9, external foot-jaw; 10, dactylos and propodos of first cheliped. Figure twice life size).

Distribution.—Great Britain, Eastern coast, Moray Frith; Southern coast; Western do. Ireland, North-east coast, Belfast; East coast, Dublin; Western coast, Galway.

GENUS IV.—*Nectocrangon*, not British.

## PART II.—GALATHEIDÆ.

### FAMILY—GALATHEIDÆ.

Carapax depressus, rostratus. Antennæ exappendiculatæ, Antennæ internæ duobus filamentis, infra oculos insitæ. Antennæ externæ satis longum uno filamentis. Chelipedum, par primum didactylum, paria, secundum ad quartum simplicia, acuminata, par quintum debile, didactylum. Maxillipedes externæ sulipediformes.

Abdomen depressus, somites, anteriores primus ad sextus in maribus appendiculati; in fœminis secundus ad sextus solum appendiculati.

Somitis, ultimus submembranaceus, sine appendice.

Genera, *Grimothea*, *Galathea*, *Munida*.

GENUS I.—*Grimothea* (nondum in Britannicis maribus inventus).

Species—*Gr. Gregaria*.

### GENUS II.—GALATHEA.

Rostrum depressum, satis latum lateribus sæpius dentatis, Chelipedum par primum satis latum, non elongatum; maxillipedes externi subpediformes elongati, angustique. Species:—*Gal. squamifera*, *Andrewsii* dispersa, *nexa*, *strigosa*, *cum multis aliis*.

#### 1. *Galathea squamifera* (Fabricius).

G. Rostro brevi, tuberculis squamosis ciliatis superne velato, mediane sulcato; dente cylindrico terminante, marginibus fortiter denticulatis; chelipedum pare primo lato, denticulatis tuberculis conferto; articulis, secundo, tertio, quartoque, externe fortiter denticulatis; maxillipedibus externis, cum ischio (articulo tertio) quam meros (articulo quarto) breviori. In littoris Magnæ Britanniae et Hiberniae.

#### 2. *Galathea Andrewsii* (Kinahan).

G. Rostro brevi, squamosis tuberculis pilosis parce velato; chelipedum pare primo (pedum par primum) elongato, rotundato, angusto, parce squamosè tuberculato, tuberculis sæpissime denticulatis; cheli-

pedûm paribus, 2do, tertioque externe dentatis, interne squamulatis maxillipedibus externis, cum ischio (articulo tertio), quam meros (articulo quarto) breviori. In littoris Magnæ Britanniæ et Hiberniæ passim.

### 3. *Galathea dispersa* (Spence Bate).

G. Rostro brevi, superne subplano, squamato, alteris ut *G. squamifera*; chelipedûm pare primo elongato, sub compresso, squamato, propodos parce dentato, carpo, et meros parce fortiter interne dentato; maxillipedibus externis cum meros quam ischio breviori. In littoris Magnæ Britanniæ. In littoris Hiberniæ ad "Belfast" et "Dublin."

### 4. *Galathea nexa* (Embleton).

G. Rostro brevi, superne lævi, subpiloso, mediane sulcato; dente cylindrico terminante, dimidio posteriori longitudinis suæ serrato; alteris, ut *Gal. squamifera*; chelipedûm pare primo globoso, satis lato, elongato, articulo sexto (propodos) externe dentato, supra parce tuberculato, villosa, articulis quinto, quartoque fortiter superne dentato; maxillipedibus externis cum meros (articulo quarto) quam ischio (articulo tertio), multo breviori. In littoris Magnæ Britanniæ. In littoris Hiberniæ ad "Belfast," "Dublin," et "Cork."

### 5. *Galathea strigosa* (Linnæus Sp.).

G. Rostro brevi, tuberculis squamosis pilosis superne consperso, mediane sulcato, deflexo; dente cylindrico terminante, marginibus fortiter dentatis; chelipedûm pare primo lato, fortiter omnino dentato; maxillipedibus externis cum ischio (articulo tertio), meros (articulo quarto), longitudinem æquante. Passim maribus Britannicis.

## GENUS III.—MUNIDA (Leach).

Rostrum cylindricum acuminatum, angustum, tricuspe. Chelipedûm par primum elongatum, angustum; maxillipedes externas et cætera ut *Galathea*. Species—Mun. Bamfica, *subrugosa*, *Japonica*.

1. Munida Bamfica (Penn sp.). Chelipedûm pare primo, bis longitudinem corporis: somitibus abdominis secundo, tertioque, antero dentatis; primo, quarto, quinto, sextoque inermibus. Syn. *Galathea rugosa*, *Munida Rondeletii*.

## HOMOLOGIES OF GALATHEIDÆ.—PLATE X.

GENERAL REFERENCES.—*cx*, coxa; *b*, basis; *i*, ischium; *m*, meros; *c*, carpus; *p*, propodos; *d*, dactylos; *x*, accessory appendage; *z*, respiratory plate.

Kθ, lower view of carapace, &c.; 1, ocular somite; 2, auditory antennal; 3, olfactory do.; 4, mandibular do, frontal portion; 6?, probably second maxillary.

- 1, eye and scale.
  - 2, auditory antennæ (internal).
  - 3, olfactory antennæ (external).
  - 4, mandible.
  - 5, first maxilla, with enlarged view of cutting edge.
  - 6, second maxilla.
  - 7, third maxilla.
  - 8, internal maxilliped.
  - 9, external maxilliped.
  - 10, first cheliped.
  - 11-13, second to fourth do.
  - 14, fifth pair of chelipeds.
  - 15, first pleopod, male.
  - 16, second do. do.
  - 17-19, third and fourth do.; the corresponding numerals on the right-hand side of the plate show the same limbs in the female. In 17-19, *c* has been inserted for *m*.
  - 20, posterior pleopod.
- md* 4, carapace upper view; regions, *f*, frontal; *g*, gastric; *hh*, hepatic; *ca*, cardiac.

The figure below this shows the fifteenth to twenty-first somites, with attached coxa (*cx*).

### GENUS III.—GALATHEA.

Anterior chelipeds strong, equal, didactyle.

External maxillipeds elongate, subpediform; terminal joints narrow; carapace depressed, beaked.

Abdomen depressed; no spines on somites; six anterior abdominal somites appendiculate in male; appendages of first somite wanting in female.

Telson unappendiculate, submembranaceous.

Antennæ unappendiculate; external long; internal inserted beneath eye-stalks; peduncle elongate.

Eyes large, with a hairy scale (?).

Rostrum depressed, moderately broad.

### SPECIES I.

Scaly Spanish Lobster.—Plate XI.

*Galathea squamifera* (Leach).

*Galathea squamifera*. Leach, Mal. Pod. Brit., t. xxviii., A, excluding Fig. 2.

*Cancer astacus squamifer*. Montagu.

*Gal. squamifera*. Leach, Edinburgh Encyclopedia, vii., p. 393; Dictionnaire des Sciences Naturelles, xviii., p. 51; M. Edwardes, Histoire Naturelles des Crustacés, ii., p. 275; Couch, Cornish Fauna, p. 77; Thompson, Natural History of Ireland, vol. iv., p. 385; Bell, British Crustacea, p. 197; White, Popular History British Crustacea, p. 87; Kinahan, Proceedings Natural History, Dublin, vol. ii., pp. 68, &c.; Report British Association, 1859; Proceedings Dublin University and Zoological Association, vol. i., p. 270; Zoologist, 3rd Series, 5775; Trans. R. I. A., vol. xxiv., p. 90.

(?) *Gal. glabra*. Risso, Crust. de Nice, 72; H. N. de l'Eur. Mer., v. 47.

*Rostrum* (*r*) short, covered with squamiform tubercles above, tubercles ciliated along margins; deeply depressed in median line, terminating in a cylindrical pointed tooth; four pointed teeth on lateral margins on each side, the posterior one much smaller than the others; first pair chelipeds broad, flattened, covered with squamiform dentated tubercles; dactylos moderate, not twisted; sides of propodos curved, outer margin toothed, two succeeding joints strongly toothed on outer edge; ischium (third joint) of external maxillipeds shorter than meros (fourth joint).

*ra*, rostrum, *Galathea Andrewsii*; 1, eye and scale; 1*a*, do. do., *Galathea Andrewsii*; 10", sculptured frontal region, *Galathea squamifera*; 9*a*, external maxillipeds, *Galathea Andrewsii*; 14, fifth cheliped, *Galathea squamifera*.

The unnumbered figure represents the external maxilliped of *Galathea squamifera*.

Distribution.—Great Britain, North, Frith of Forth; Southern coast, general. Ireland, all round coasts. Europe, &c., France, Mediterranean, Nice.

## SPECIES II.

Slender-armed Spanish Lobster.—Plate XII. and Plate XI. figs. 1*a*, *ra*, and 9*a*.

### *Galathea Andrewsii* (Kinahan).

*Galathea Andrewsii*. Kin., Proceedings Nat. Hist. Society, Dublin, vol. ii., p. 58, pl. xvi., fig. 8, and fig., p. 71; *ib.*, p. 47, as *nexa*, &c.; Zoologist, 3rd series, p. 5775, &c.; Trans. R. I. A., vol. xxiv., page 95; Stimpson, Prod., p. 76; Spence Bate, Proceedings Linn. Soc., vol. iii., p. 104.

*Galathea squamifera*. Leach (in part Junr.), Mal. Pod. Brit., p. xxvii., fig. 2.

*Rostrum* moderate, sparingly covered with elongated, squamiform tubercles above, depressed in the centre, terminating in a flat, pointed tooth, armed with four flattened teeth on each side, the last two of which are separated from the others. First pair of chelipeds elongate, narrowed, covered with a few squamiform tubercles, terminating in a few scattered

*hairs, or ciliated. Sides of propodos sparingly dentate. Two succeeding pairs of chelipeds strongly dentate on outer margin and upper surface. Ischium of external maxillipeds shorter than meros.*

Distribution.—Great Britain, North, Moray; South, Plymouth. Ireland, general. Extra-Britannic, Madeira, Algiers.

### SPECIES III.

#### Scaly-armed Spanish Lobster.—Plate XIII.

##### *Galathea dispersa* (Spence Bate).

*Galathea dispersa.* Spence Bate, Proceedings Linnæan Society, London, vol. iii., p. 3; Kinahan, Proceedings British Association, Report on Dublin Bay Dredging, 1860; Proc. Nat. Hist. Soc., Dublin, vol. iii., p. 49; Trans. Roy. Irish Ac., vol. xxiv., p. 99.

*Rostrum (r) moderate, nearly plane above, squamate, terminating as a flattened tooth, and bearing four flattened teeth on each side. First pair of chelipeds elongate, somewhat flattened; dactylos narrowed; sides of propodos nearly parallel, minutely toothed on outer margin, squamate; two succeeding articulations sparingly strongly toothed on inner margin; internal antennæ barely surpassing tip of rostrum; ischium of external foot-jaws (9), nearly double length of meros of same limb.*

1, eye; 10", sculpture.

Distribution.—Great Britain, South coast. Ireland, northern coast, Belfast; Eastern coast, Dublin.

### SPECIES IV.

#### Smooth-beaked Spanish Lobster.—Plate XIV.

##### *Galathea nexa* (Embleton).

*Galathea nexa.* Embleton, Proceedings Berwickshire Club; Thompson, Annals of Natural History, p. 255; Natural History of Ireland, vol. iv., p. 385; Bell. Brit. Stalk-eyed Crust., 204; White, Pop. Hist. Brit. Crust., p. 88; Kinahan, Proceed. Nat. Hist. Soc., Dublin, vol. ii., excluding p. 47, which refers to *G. Andrewsii*; Trans. Roy. Ir. Ac., vol. xxiv., p. 102; Spence Bate, Proceed. Linn. Soc., vol. iii., p. 3.

*Rostrum (r), moderate, quite smooth above, covered with scattered hairs, depressed in the median line, terminating in a cylindrical tooth, which is serrated on its edge for its posterior half; borders of rostrum armed with two principal rounded teeth, and two secondary and smaller; first pair of chelipeds somewhat globose, moderately broad, elongate, twisted; sides of propodos parallel, toothed on outer margin, surface sparingly tuberculated, hairy; two succeeding joints strongly toothed on upper surface; internal antennæ surpassing rostrum; ischium of external foot-jaw nearly double length of meros.*

(9), external footjaw; (1), eye and scale; 10", sculpture.

Distribution.—Great Britain, Northern coast, Eastern and Southern coasts. Ireland, Northern coast, Belfast; Eastern coast, Dublin; Southern coast, Cork.

SPECIES V.

Spiny Spanish Lobster.—Plate XV.

*Galathea Strigosa* (Fabricius Sp.).

*Cancer strigosus*. Linnæus, *Systema Naturæ*, 1053; *Herbst*. ii., p. 50, t. xxvi.

*Astacus strigosus*. Pennant, *British Zoology*, iv., p. 24, t. xv.

*Galathea strigosa*. Fabr., *Suppl.* 414; Latreille, *Genera Crustacæ et Insectes*, p. 49; Leach, *Edin. Encycl.*, vii., p. 398; Edw. N. H. *Crust.*, ii., p. 273; Bell, *Brit. Crust.*, p. 200; White, *Pop. Hist. Brit. Crust.*; Kin., *loc. cit.*; Spence Bate; Couch; and most British authors.

*Galathea spinifera*. Leach, *Mal. Pod. Brit.* xxviii.

*Rostrum* (r), short, deflected, clothed above with a few scattered hairy squamiform tubercles; depressed in median line, terminating in a cylindrical pointed tooth, its sides armed with three pointed teeth, and one minute tooth over inner border of orbit; first pair of chelipeds broad, all the articulations very spinous on their borders and superior surfaces; dactylos short; propodos clothed with squamiform tubercles, scattered among the toothed tubercles; meros of external maxillipeds (9), longer than ischium.

(11), eye and scale; (10"), sculpture.

Distribution.—Great Britain, North, Moray Frith; South coast. Ireland, general. Extra-Britannic, Mediterranean.

The President made a communication on the arrangement of earthen raths,—commonly, though erroneously, known as Danish forts,—over the surface of Ireland; his observations having a special reference to the county of Kerry, and being illustrated by a map constructed on the one-inch Ordnance Survey, with the lines of collineation laid down according to the disposition of the forts.

The President signified his intention of making a further communication on the subject, illustrated by a map of the entire county of Kerry; and expressed a hope, that, as he would be unable to deal in like manner with the whole of Ireland, other members of the Academy would pursue the inquiry, and construct similar maps of other counties.

The Academy then adjourned.





Grey Shrimp.—*Crangon vulgaris*.

Channeled-Tailed Shrimp.—*Stomatopoda Allmanni*.

Two-Spined Shrimp.—*Cheraphilus bispinosus*.

Three-Spined Shrimp.—*Cheraphilus trispinosus*.

Smooth-tailed Spinous Shrimp.--*Cherapilus Pattersoni*.

Spined Shrimp.—*Cheraphilus spinosus*.

Banded Shrimp.—*Egeon fasciatus*.

Sculptured Shrimp.—*Egeon sculptus*.



Scaly Spanish Lobster.—*Galathea squamifera*.



Slender-armed Spanish Lobster.—*Galathea Andrewsii*.

Scaly-armed Spanish Lobster.—*Galathea dispersa*.

Smooth-beaked Spanish Lobster.—*Galathea nexa*.

Spiny Spanish Lobster.—*Galathea strigosa*.